

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

REC'D 02 JUN 2006

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Applicant's or agent's file reference TS 1407 PCT	FOR FURTHER ACTION <div style="text-align: right; font-size: small;">See Form PCT/IPEA/416</div>																									
International application No. PCT/EP2005/050340	International filing date (day/month/year) 27.01.2005	Priority date (day/month/year) 28.01.2004																								
International Patent Classification (IPC) or national classification and IPC INV. B01J8/22																										
Applicant SHELL INTERNATIONALE RESEARCH MAATS... et al.																										
<ol style="list-style-type: none"> 1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36. 2. This REPORT consists of a total of 6 sheets, including this cover sheet. 3. This report is also accompanied by ANNEXES, comprising: <ol style="list-style-type: none"> a. <input type="checkbox"/> sent to the applicant and to the International Bureau a total of sheets, as follows: <ul style="list-style-type: none"> <input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box. b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions). 																										
<ol style="list-style-type: none"> 4. This report contains indications relating to the following items: <table style="width: 100%; border: none;"> <tr> <td style="width: 10%;"><input checked="" type="checkbox"/></td> <td style="width: 10%;">Box No. I</td> <td>Basis of the report</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table> 			<input checked="" type="checkbox"/>	Box No. I	Basis of the report	<input type="checkbox"/>	Box No. II	Priority	<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/>	Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	Box No. VI	Certain documents cited	<input checked="" type="checkbox"/>	Box No. VII	Certain defects in the international application	<input checked="" type="checkbox"/>	Box No. VIII	Certain observations on the international application
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Date of submission of the demand 22.11.2005	Date of completion of this report 01.06.2006																									
Name and mailing address of the international preliminary examining authority: <div style="display: flex; align-items: center;"> <div> European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465 </div> </div>	Authorized officer Thomasson, P Telephone No. +49 89 2399-8339																									



**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/EP2005/050340

Box No. I Basis of the report

1. With regard to the **language**, this report is based on
- ☒ the international application in the language in which it was filed
 - ☐ a translation of the international application into , which is the language of a translation furnished for the purposes of:
 - ☐ international search (under Rules 12.3(a) and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4(a))
 - ☐ international preliminary examination (under Rules 55.2(a) and/or 55.3(a))
2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

Description, Pages

1-26 as originally filed

Claims, Numbers

1-19 as originally filed

Drawings, Sheets

1/4-4/4 as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/EP2005/050340

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	
	No: Claims	1-19
Inventive step (IS)	Yes: Claims	
	No: Claims	1-19
Industrial applicability (IA)	Yes: Claims	1-19
	No: Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

1. The following documents are referred to in this communication; the numbering will be adhered to in the rest of the procedure:

D1: US-A-4 060 127 (FILIPPOV VLADIMIR JURIEVICH ET AL) 29 November 1977 (1977-11-29)

D2: US-A-3 870 099 (WOLOWODIUK WALTER) 11 March 1975 (1975-03-11)

D3: US-A-3 656 543 (WOLOWODIUK WALTER ET AL) 18 April 1972 (1972-04-18)

D4: US-A-5 527 473 (ACKERMAN CARL D) 18 June 1996 (1996-06-18)

2. The present application does not meet the requirements of Article 33(2)-(3) PCT for the following reasons:

The subject-matter of claim 1 is a **removable cooling** module. The description on page 13, lines 25-29 discloses the signification of the term "removable": "In principle removable connection may be achieved by welding together the components in question, wherein they may be disconnected by suitable cutting means". In the light of this explanation of the term "removable" any module which can be separated by cutting can be considered as being removable. Furthermore the term "cooling" corresponds to a **process** feature and not to an apparatus feature. The term "a cooling module" is interpreted as being a module **suitable** for cooling. Any heat-exchanger module used for heating a reactor is also suitable for cooling a reactor, depending on the heat-exchange fluid used.

D1-D4 disclose a **removable** (see above, signification of removable) cooling (see above, signification of cooling) module with (1) a coolant **feed tube**, (2) a **distribution** and a **collection** chambers, (3) **tubes** which are linked to the distribution and collection chambers and (4) an **outlet** located toward the **same end** of the cooling module as the coolant feed tube, the **inlet** of the coolant feed tube and the **outlet** of the collection chamber being obviously adapted to be removably connected to a charge/discharge pipe (see D1-D4: European Search Report). Furthermore D4 discloses the use of this module for **Fischer-Tropsch** synthesis (see D4: column 4, lines 5-18). Consequently the

subject-matter of claims 1, 9 and 17 is not new in the sense of Article 33(2) PCT. The attention of the applicant is further drawn to the fact that claim 19 is indicating a Fischer-Tropsch product, which is obviously not novel, independently of the apparatus used for its manufacture. This claim should be **deleted**.

3. The technical features of claims 2-8, 10-16 and 18 are either known from D1-D4 or are considered to be merely one of several possibilities which the skilled person would select, in accordance with the circumstances, without the exercise of inventive skill. Consequently these claims do not meet the requirements of Article 33(2)-(3) PCT.

Re Item VII

Certain defects in the international application

Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in **D4** is not mentioned in the description, nor is this document identified therein.

Re Item VIII

Certain observations on the international application

The present application does not meet the requirements of Article 6 PCT for the following reasons:

Claims 1 and 9 do not meet the requirements of Article 6 PCT in that the matter for which protection is sought is not clearly defined. The claims attempt to define the subject-matter in terms of the **result to be achieved** ("a **removable** cooling module"), which merely amounts to a statement of the underlying problem, without providing the technical features necessary for achieving this result. It is not indicated in claims 1 and 9 which are the technical features allowing the cooling module to be **removable** (see for example the description on page 13, lines 25-29, page 17, lines 11-23). Furthermore the cooling module must be small enough to pass through the manhole of the reactor (see the description on page 19, lines 18-21). This is also not indicated in claims 1 and 9.

**INTERNATIONAL PRELIMINARY
REPORT ON PATENTABILITY
(SEPARATE SHEET)**

International application No.

PCT/EP2005/050340